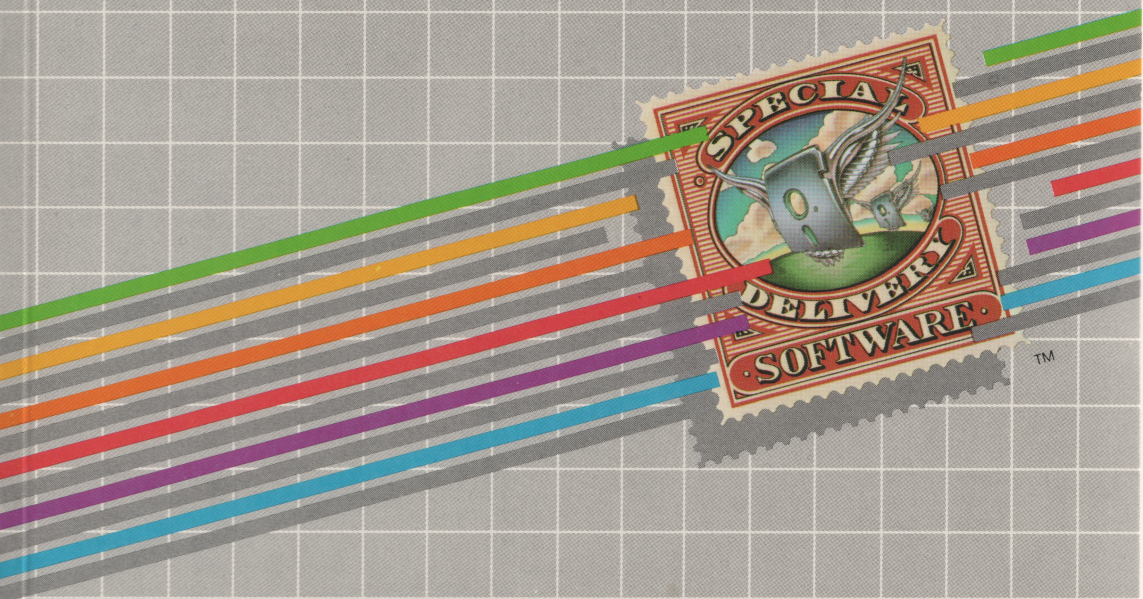
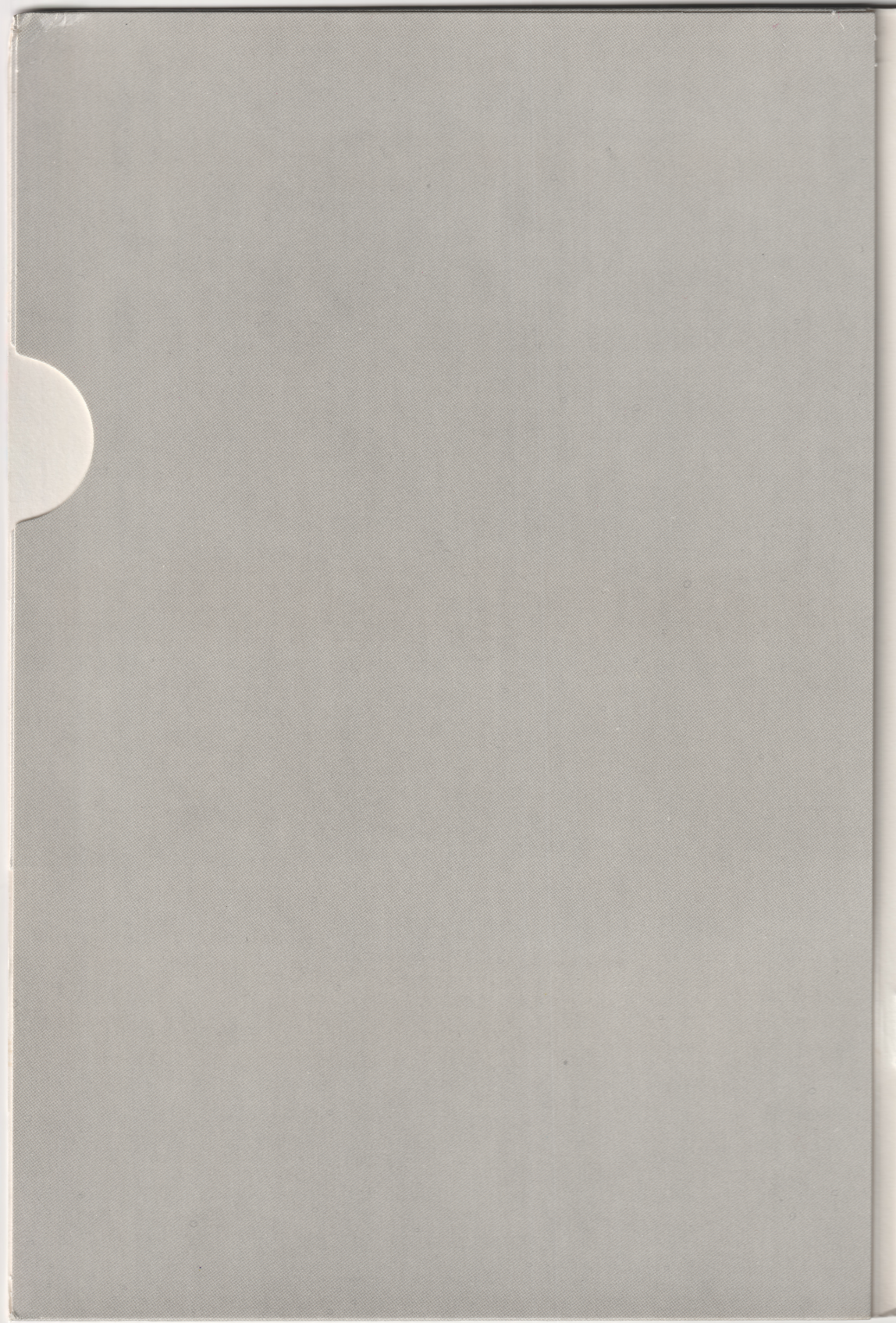


A P P L E





APPLE TERMINAL: VT-100 EMULATOR

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In conjunction with Apple Computer Inc.

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1.0 INTRODUCTION

The Apple Terminal is a program designed for the Apple II DOS environment that permits the Apple to be used as a remote terminal to a Digital Equipment Corporation RSTS/E timesharing system.

While the standard Communications I/O Card available for the Apple will also enable it to be used as a remote terminal, there are many features of the Apple Terminal system that optimize it for use as an RSTS/E terminal.

This manual assumes that your Apple II system is correctly set up. If you're not sure that the system is ready to go, see Appendix A.

1.1 Terminology

In this document, the character © means a key pressed while holding the control (CTRL) key down. For example, ©A means holding down the control (CTRL) key while pressing the A key.

Pressing of the return key is indicated by <return>.

2.0 REQUIREMENTS

Minimum requirements for using the Apple Terminal are an Apple II with at least 48K and one disk drive, DOS and Applesoft. An Apple II Plus will also work; an Integer Basic card is not required.

An unmodified Communications Card must be in I/O slot 2.

Apple Terminal is designed to work at either 110 or 300 baud.

While the Apple II may be connected directly to the RSTS/E system, this document assumes remote operation utilizing an acoustic coupler. If direct connection is the case, operation is exactly the same except for the section on dialing the computer.

3.0 HOW TO START

With Apple II systems, and the Autostart ROM, the Apple Terminal programs start automatically as soon as you put the diskette in

the disk drive and turn on the Apple. This process of starting the program is known as "booting." Use the following steps to boot the Apple Terminal diskettes.

- (1) Place the diskette marked VT-100 Emulator in the disk drive as shown in the DOS manual. If you have more than one disk drive, put the diskette in Drive 1. If you hold the diskette in your right hand with your thumb over the label, you're almost certain to insert the diskette correctly. Remember to close the drive door after inserting the diskette.
- (2) Turn on the Apple. If the disk drive's IN USE light comes on, and the drive makes whirring noises, then your system is automatically booting the diskette - and you can skip to the next section on Program Operation.

If the disk drive doesn't start, see Appendix A for details on the procedure for booting a Special Delivery Software diskette.

4.0 PROGRAM OPERATION

Before the timesharing system telephone number is dialed, the Apple Terminal program should be started, as described above, and initialized.

When the Apple Terminal program begins, it will display:

APPLE TERMINAL

BAUD RATE (110,300) ?

The answer to this question will cause the Communications Card to be initialized at the appropriate speed. Most RSTS/E systems maintain dial-in port speeds at 300 baud, so the reply to the above question should be:

BAUD RATE (110,300) ?300<return>

The screen will immediately go blank, and the program has started.

4.1 Dialing In

After initializing Apple Terminal with the correct speed, its time to dial the remote computer. Turn on the acoustical coupler and dial the telephone number of the computer. When you hear the computer answer the telephone with a steady tone, place the telephone receiver handset into the acoustical coupler. Be sure to get the mouthpiece

in the correct end. Most couplers have the word "CORD" by the end where the mouthpiece should go.

Most couplers also have a "carrier detect" light that will go on indicating that communication has been established.

When you are sure that communication has been established, you should see the RSTS/E log in message displayed on the Apple screen. If it doesn't appear, press carriage return. If it still doesn't appear, look to see if the carrier detect light has gone out. If it has, hang up and dial again. It sometimes takes two or three tries for everything to get together.

No matter how long it takes, the Apple Terminal program will wait without error. Don't be suprised by any funny characters that may appear on the screen when you turn the coupler on and off, or if the carrier detect light goes out. These are caused by noise and will have no adverse effect.

If you cannot establish contact with the remote computer, the best way to terminate the Apple Terminal program is to re-boot.

4.2 Logging On

In order to be able to log in to the RSTS/E system, you must have an account number and a password. The account number will be two numbers separated by a comma. The RSTS/E system will display the log in message followed by the prompt for the account number:

```
RSTS/E TIMESHARING JOB 15 13:45
#
```

Enter the account number, followed by RETURN. As an example, the account number 10,110 would be entered:

```
#10,110<return>
```

RSTS/E will then prompt for the password:

```
PASSWORD:
```

Enter the password you have been given. As you enter the password, it will not be displayed on the screen. If you make a mistake, or if the password is not correct, RSTS/E

will reply:

```
INVALID ENTRY
#
```

You must re-enter BOTH the account number and the password. RSTS/E permits three retries, and then hangs up the phone. If you do not have a valid account number and password, end the Apple Terminal program by pressing the RESET key. You MUST NOT end the program this way if you successfully log on.

Once you have successfully logged on, Apple Terminal will function just as any CRT terminal. If the computer responds "R%!\$9" where you expect "Ready", the RSTS/E system you are talking to is in upper/lower case. RSTS/E has to be set for upper case only (see Section 5) for the Apple.

4.3 Special Keys

Apple Terminal has two special keys. There is no delete or rubout key on the Apple keyboard, so special programming in the Apple Terminal changes the left arrow key into a delete key. Since this is the way in which left arrow is treated by most Apple programs, very little difference will be noticed.

The second special character is the backslash. This character is required by a number of RSTS/E utilities, and also by many application programs, but it is not available on the Apple keyboard. To remedy this, special programming has been included in Apple Terminal to change ©B into the backslash character. To type a backslash, hold down the control (CTRL) key while pressing the B key. A backslash will appear on the screen.

5.0 ADDITIONAL CAPABILITIES

Apple Terminal has functionality far beyond that of a simple terminal. To access these features, enter the READY state and press ©A. The screen will be cleared and the following menu

displayed:

APPLE TERMINAL

A - AUTO SET UP
F - FILE TRANSFER
P - SET EXPECTED PROMPT
R - RESUME TERMINAL OPERATION
E - EXIT

COMMAND ?

Each function is discussed individually below.

5.1 Auto Set Up

RSTS/E is capable of supporting a wide variety of terminals, and includes a program that accepts commands informing RSTS/E of the characteristics of any particular terminal. The auto set up function automatically sends the series of commands appropriate for the Apple Terminal system. While individual discussion of these commands is beyond the scope of this documentation, they are listed below:

SET NO LC OUTPUT
SET SCOPE
SET WIDTH 40
SET XON
SET ESC SEQ
SET FILL 5

It is highly recommended that this function be invoked immediately following a successful log in. When the sequence of commands is complete, the menu will be displayed again.

5.2 File Transfer

It is often very useful to be able to transfer files from the Apple II to a RSTS/E system or vice versa. This is particularly true of text files or program source files, but because of the way in which Applesoft and Integer Basic source programs are stored on disk, they may not be transferred directly. Only DOS text files may be transferred.

When this option is selected, the program will ask:

IS DESTINATION APPLE OR REMOTE ?

This is where you want to transfer the file TO. Reply A if you wish to transfer a file from RSTS/E to the Apple. Reply R if you wish to transfer a file from the Apple to the RSTS/E system.

5.2.1 From Apple to RSTS/E

If you replied R, the program will ask:

FROM APPLE TEXT FILE ?

You must reply with the name of an Apple text file. The Apple Terminal program accepts the RSTS/E syntax for designation of the disk on which the file resides. If the text file is named ZORKO, DK1:ZORKO would refer to disk drive 1; DK2:ZORKO would refer to disk drive 2. If no disk is designated, the drive accessed will be the one from which the Apple Terminal program was loaded.

The program will then prompt:

TO REMOTE FILE ?

You must reply with a valid RSTS/E file name. The Apple text file will be transferred to this file. If it was a previously existing file, its original contents will be destroyed.

The file transfer will begin, and the file will be displayed on the terminal as it is transferred. When the transfer is complete, the menu will be redisplayed.

5.2.2 From RSTS/E to Apple II

If you replied A, the program will prompt:

FROM REMOTE FILE ?

You must reply with the name of an existing RSTS/E text file. Device designators are permitted, but account designators that include commas are not permitted.

The program will then prompt:

TO APPLE TEXT FILE ?

You must reply with the name of the file that you want to create on the Apple disk. The Apple Terminal supports the RSTS/E syntax for designating disk drives. If the file you want to create is named ZORKO, then DK1:ZORKO would be created on drive 1. DK2:ZORKO would be created on drive 2. If no disk designator is included, the file will be created on the drive from which the Apple Terminal program was loaded.

The file transfer will start, and the contents of the file will be displayed on the screen as it is transferred. When the transfer is complete, the menu will be redisplayed.

5.3 Set Expected Prompt

Some RSTS/E systems do not use the standard prompt to indicate that the system is waiting for input. If the system you are dialing into does not use READY as its prompt, then you must use this function to change the prompt expected by Apple Terminal BEFORE DOING ANYTHING ELSE INCLUDING AUTO SET UP! Otherwise, the Apple Terminal program will hang waiting for the READY prompt and the only way to stop it will be to press RESET and restart the program.

When this function is selected, Apple Terminal will ask:

WHAT PROMPT FROM THE REMOTE WILL
INDICATE THAT IT IS WAITING FOR INPUT ?

You must reply with the exact characters that will be displayed by RSTS/E.

The program then asks:

WILL THIS PROMPT BE FOLLOWED BY A
CARRIAGE RETURN ?

Answer appropriately, YES or NO.

Under normal circumstances, this function will not be used.

5.4 Resume Terminal Operation

Selection of this function will clear the screen, and return

control of the dialogue to the operator. The menu may be displayed again by pressing @A.

5.5 Exit

This is the only proper way to end the program if a successful log in has been accomplished. This command will properly log off the RSTS/E system and terminate the Apple Terminal program.

6.0 WHAT TO DO IF YOU HAVE PROBLEMS

The Apple Terminal program is not designed to be able to catch all possible errors. If you are transferring a file and specify an invalid file name, it is possible that the program may either hang or be aborted by Apple DOS. If a successful log in has been made, the Apple Terminal program can be stopped and restarted if necessary, and the connection to RSTS/E will not be broken. If Apple Terminal should hang, simply press reset and restart it. You can even reboot DOS if necessary. After answering the baud rate question, the screen will be cleared and RSTS/E will be waiting. A CTRL C will display the READY prompt.

This is why it is so important to use the Exit command from the menu to stop Apple Terminal. The Exit command performs a proper log off.

Also, don't be surprised if garbage characters appear in the log in message. Most RSTS/E systems send both upper and lower case characters. Until auto set up is done, lower case characters will appear as garbage on the Apple screen.

If garbage characters appear and you are unable to log on, you may have used the wrong baud rate. Restart the Apple Terminal program with the other baud rate and try again.

Another frequent source of garbage characters is a noisy phone line. If everything is working okay except for characters occasionally getting wiped out, the cause is probably a noisy line. Unless the noise is excessive, don't try to re-dial. It is usually difficult enough to get a connection at all, much less take the slim chance of getting a better line.

APPENDIX A

SETTING UP THE APPLE II SYSTEM

This appendix includes a list of the equipment you'll need to use the programs on your Apple II. You do not need to read all the manuals, but they should be on hand to answer questions that may arise in operating the equipment (e.g., how to boot a diskette).

In order to be able to provide Special Delivery Software at a lower cost, the disks have been copy protected. This software requires an Autostart ROM, and that the Autostart ROM is the only monitor ROM in the system.

The Apple Terminal program is written in Applesoft BASIC. To use it you'll need:

- o an Apple II Plus with 48K bytes RAM; or
- o an Apple II with 48K bytes RAM and an Applesoft BASIC Firmware Card; or
- o an Apple II with the Apple Language System.

PLUS:

- o a Video Monitor or Television;
- o One or More Apple Disk II's (One with Controller and 16-Sector Proms);
- o an Unmodified Apple Communications Interface Card;
- o an Acoustic Coupler or Modem;
- o an Account and Password for Logging On to an RSTS/E Timesharing System.

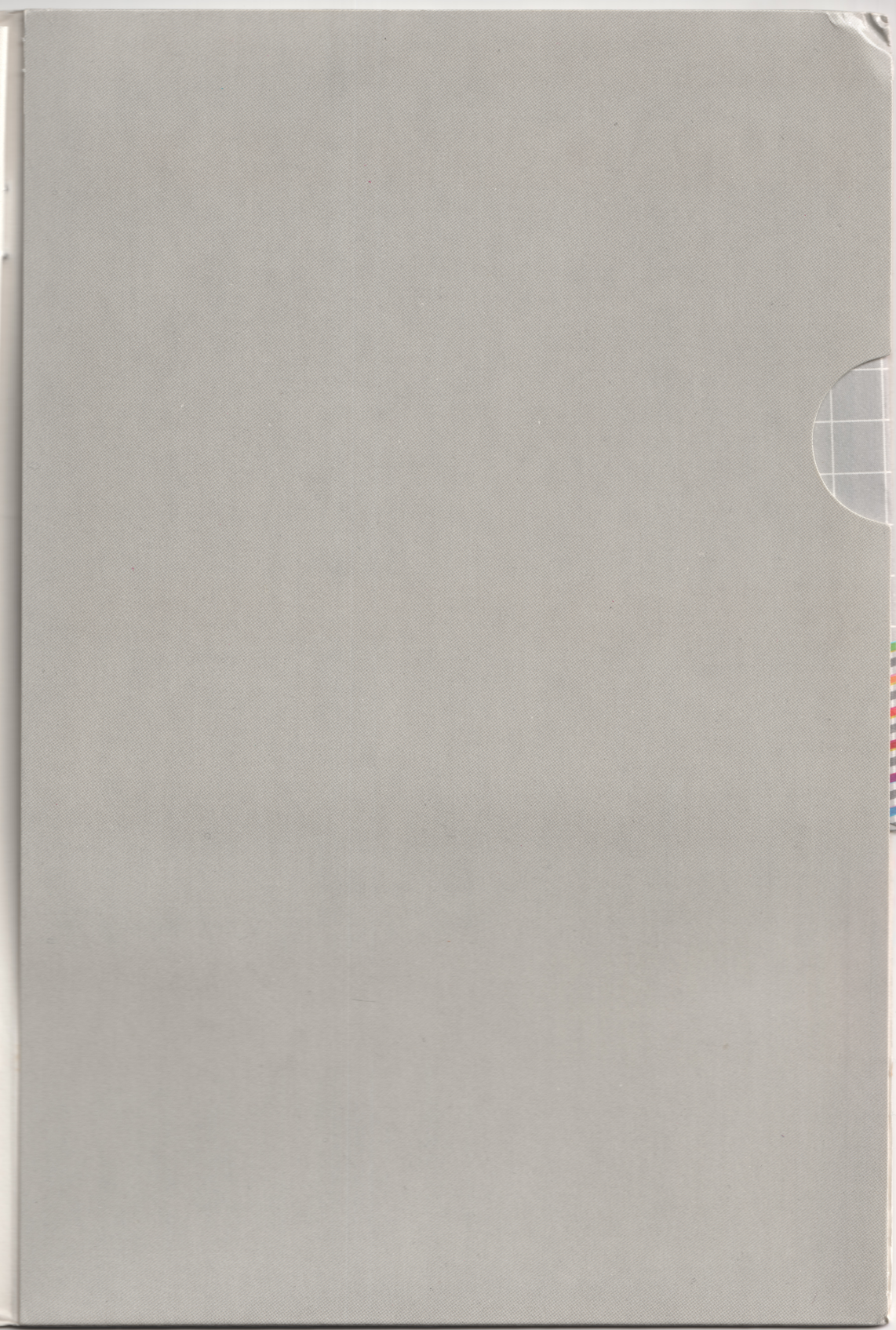
For reference, you should have on hand a copy of the following manuals:

- o This Manual (A User's Guide to the Programs);
- o an Apple II BASIC Programming Manual (Setting up the Apple II);
- o a DOS Manual (How to Boot the Diskettes).

PUTTING THE PIECES TOGETHER

Here are the steps to follow to put your system together:

- (1) To set up your Apple II, follow the instructions in the Apple II BASIC Programming Manual. You may not need to attach the Game Controllers, although there is no harm in doing so. Your Apple II must have at least the minimum amount of memory listed under the equipment description for you to use the programs.
- (2) If you already have a Disk Operating System, and are using a version of DOS that runs in 13 sectors (DOS 3.2.1 or earlier), you will need to change two proms on your disk controller card to update your system to 16 sectors. Any version of DOS earlier than release 3.3 will need to be updated. These proms are also the same proms that come with the Pascal Language System. Consult a DOS 3.3 manual for these procedures.





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